The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A mask blank for use in EUV lithography comprising a substrate with a front side and a rear side ~~whereby~~

wherein the front side comprises a coating suitable for use as a mask in EUV lithography, and ~~is applied to the front side, wherein~~

the rear side comprises an electrically conductive coating with a layer thickness of about 100 nm and a resistivity of at least about 10^{-7} Ω cm,

wherein the electrically conductive coating has been applied by ion beam assisted deposition.

2. (Currently Amended) The mask blank according to claim 31 ~~1~~, wherein the substrate comprises a material with an extremely low coefficient of thermal expansion.

3. (Currently Amended) The mask blank according to claim 31 ~~1~~, ~~wherein, with a layer thickness of approximately 100 nm, the resistivity of the electrically conductive coating is at least approximately 10^{-7} Ω cm, more preferably at least approximately 10^{-6} Ω cm and even more preferably at least approximately 10^{-5} Ω cm~~ wherein the electrically conductive coating has been applied by ion beam assisted sputtering.

4. (Currently Amended) The mask blank according to claim ~~1~~ 3, wherein the resistance of the electrically conductive coating to abrasion with a cloth according to DIN 58196-5 (German Industry Standard) falls into at least category two.

5. (Currently Amended) The mask blank according to claim ~~1~~ 3, wherein the resistance of the electrically conductive coating to abrasion with an eraser according to DIN 58196-4 (German Industry Standard) falls into at least category two.

6. (Currently Amended) The mask blank according to claim ~~1~~ 3, wherein the adhesive strength of the electrically conductive coating determined in an adhesive tape test according to DIN 58196-6 (German Industry Standard) corresponds to a detachment of substantially 0%.

7. (Currently Amended) The mask blank according to claim 31 ~~1~~, wherein the substrate comprises silica glass or ceramic glass.

8. (Currently Amended) The mask blank according to claim 31 ~~1~~, wherein at least on the front side of the substrate a coating is applied which comprises a system of dielectric double layers~~, in particular Mo/Si double layers, and one chromium layer or one EUV-absorbing layer~~.

9. (Currently Amended) The mask blank according to claim 8, wherein the dielectric double layers are applied by ion-beam-assisted deposition~~, in particular ion-beam-assisted sputtering~~.

10. (Currently Amended) The mask blank according to claim ~~1~~ 3, wherein the front side and the rear side have an ~~a substantially~~ identical coating.

11. (Currently Amended) A method for coating a mask blank for use in EUV lithography comprising ~~a substrate with a front side and a rear side, in which method a coating for use as a mask in EUV lithography is applied to the front side and an electrically conductive coating is applied to the rear side~~

providing a substrate with a front side and a rear side;

applying a coating suitable for use as a mask in EUV lithography to the front side;

applying an electrically conductive coating by ion beam assisted deposition to the rear side with a layer thickness of about 100 nm and a resistivity of at least about 10^{-7} Ω cm.

12. (Currently Amended) The method according to claim 11, wherein the substrate ~~is provided as a substrate comprising~~ comprises a material with an extremely low coefficient of thermal expansion.

13. (Currently Amended) The method according to claim 11, ~~wherein the electrically conductive coating is applied in such a way that, with a layer thickness of approximately 100 nm, the resistivity of the electrically conductive coating is at least approximately 10^{-7} Ω cm, more preferably at least approximately 10^{-6} Ω cm and even more prefera-~~

~~bly at least approximately 10^{-5} Ω cm~~ wherein the electrically conductive coating is applied by ion beam assisted sputtering.

14. (Currently Amended) The method according to claim ~~11~~ 13, ~~whereby~~ wherein the conductive coating is applied in such a way that the resistance of the electrically conductive coating to abrasion with a cloth according to DIN 58196-5 (German Industry Standard) falls into at least category two.

15. (Currently Amended) The method according to claim ~~11~~ 13, ~~whereby~~ wherein the conductive coating is applied in such a way that the resistance of the electrically conductive coating to abrasion with an eraser according to DIN 58196-4 (German Industry Standard) falls into at least category two.

16. (Currently Amended) The method according to ~~11~~ 13, ~~whereby~~ wherein the conductive coating is applied in such a way that the adhesive strength of the electrically conductive coating determined in an adhesive tape test according to DIN 58196-6 (German Industry Standard) corresponds to a detachment of substantially 0%.

17. (Currently Amended) The method according to claim 11, in which at least on the front side of the substrate a coating is applied which comprises a system of dielectric double layers~~, in particular Mo/Si double layers, and one chromium layer or one EUV-absorbing layer~~.

18. (Currently Amended) The method according to claim 17, ~~whereby~~ wherein the dielectric double layers are applied by ~~ion-beam-assisted deposition, in particular~~ ion-beam-assisted sputtering.

19. (Currently Amended) The method according to claim ~~11~~ 13, in which the front side and the rear side have an ~~a substantially~~ identical coating.

20. (New) The mask blank according to claim 3, wherein the electrically conductive coating has been applied by

sputtering a target by irradiating with a first particle beam to thereby sputter the electrically conductive coating onto the rear side of the substrate, and

flattening the electrically conductive coating by irradiating with a second particle beam after the deposition of the electrically conductive coating.

21. (New) The mask blank according to claim 20, wherein the rear side of the substrate has been cleaned from impurities by irradiating with the second particle beam before the electrically conductive coating is sputtered onto the rear side of the substrate.

22. (New) The mask blank according to claim 21, wherein the substrate and the target have been disposed in a vacuum chamber, at least one reactive gas has been provided in the vacuum chamber at a predetermined pressure, wherein cleaning of the rear side of the substrate has been enhanced by the at least one reactive gas.

23. (New) The mask blank according to claim 22, wherein the at least one reactive gas comprises oxygen.

24. (New) The method according to claim 13, wherein the electrically conductive coating is applied by

sputtering a target by irradiating with a first particle beam to thereby sputter the electrically conductive coating onto the rear side of the substrate; and

flattening the electrically conductive coating by irradiating with a second particle beam after the deposition of the electrically conductive coating.

25. (New) The method according to claim 24, further comprising cleaning the rear side of the substrate from impurities by irradiating with the second particle beam before the electrically conductive coating is sputtered onto the rear side of the substrate.

26. (New) The method according to claim 25, further comprising

disposing the substrate and the target in a vacuum chamber, and providing at least one reactive gas in the vacuum chamber at a predetermined pressure;

wherein cleaning of the rear side of the substrate has been enhanced by the at least one reactive gas.

27. (New) The method according to claim 26, wherein the at least one reactive gas comprises oxygen.

28. (New) The mask blank according to claim 8, wherein the system of dielectric double layers comprises Mo/Si double layers, and one chromium layer or one EUV-absorbing layer.

29. (New) The mask blank according to claim 31, wherein the electrically conductive coating has a resistivity of at least about $10^{-6}\ \Omega$ cm.

30. (New) The mask blank according to claim 31, wherein the electrically conductive coating has a resistivity of at least about $10^{-5}\ \Omega$ cm.

31. (New) A mask blank for use in EUV lithography comprising a substrate with a front side and a rear side

wherein the front side comprises a coating suitable for use as a mask in EUV lithography, and

the rear side comprises an electrically conductive coating with a layer thickness of about 100 nm, a resistivity of at least about $10^{-7}\ \Omega$ cm, and a homogeneity of peak reflection of smaller than ± 1% and a homogeneity of a center wavelength of smaller than ± 0.1 nm over the whole area of the mask blank,

wherein the electrically conductive coating has been applied by ion beam assisted deposition.

32. (New) A mask blank according to claim 31, wherein the electrically conductive coating has a homogeneity of peak reflection of smaller than ± 0.2% and a homogeneity of a center wavelength of smaller than ± 0.02 nm over the whole area of the mask blank.

33. (New) A mask blank according to claim 31, wherein the electrically conductive coating has a resistivity of at between about $10^{-5}\ \Omega$ cm and $10^{-7}\ \Omega$ cm.